

South Carolina

Teaching Kids About IPM: A Curriculum for K-5 Education in Urban and Landscape IPM

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Project Team:

Eric Benson
Dale Layfield
Amy Nichols
Janet Scott
Sam Sparace
Geoffrey Zehnder
Pat Zungoli

Project Leader:

Geoffrey Zehnder

Lead Institution:

Clemson University

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—Geoff Zehnder

In several South Carolina schools, children prowl the halls in a unique scavenger hunt. The treasures? Bugs. Using a new elementary school curricula developed by Clemson University IPM staff, teachers hope to teach kids about integrated pest management, helping them change their habits not only to reduce pests on school grounds—and in turn reduce the use of pesticides—but to tell their parents how they can reduce pesticide use at home.



“If you introduce kids to IPM at this age, as adults they'll be less likely to go to Lowe's and get chemicals as a first resort,” said Geoff Zehnder, entomologist and IPM coordinator at Clemson University.

With a CSREES Southern Regional IPM grant, Zehnder and collaborating faculty and extension specialists created the “Discovering IPM” curricula, a step-by-step approach to science education that uses practical situations and physical activities. The curricula, divided into three grade groups (grades 1-3, grade 4 and grade 5), introduces IPM principles to younger children, narrowing to IPM at home in fourth grade and IPM at school for fifth grade.

Beginning with a scavenger hunt for pests, the curricula describes various household pests, such as common insect pests, spiders, molds and small mammals. Students also role play through several scenarios, including flies around an open garbage can and mouse droppings around some spilled peanut butter. Each lesson, which conforms to state standards, goes beyond the typical science lesson, assigning essays and written answers to scenarios. Students must also think about how to communicate with others about problems—one scenario involves a neighbor's leftover trash. Zehnder said that the curricula responded to a need.

“The elementary school science teachers said that topics related to IPM and insects would be highly appropriate for teaching of the required science standards and a fun way for students learn about

science,” said Zehnder. “So we developed this curriculum targeting fourth and fifth graders. It was a bit complicated because we had to develop curriculum that would address specific standards prescribed by the state department of education. But IPM encompasses so many diverse topics that it was easy to identify several topics that teachers could choose from to address the required standards.”

Because of their size, children are much more vulnerable than adults to the toxins in pesticides. And because they spend much of their time close to the ground, they are more likely to transfer pesticide residues from the ground to their faces. Several states have adopted school IPM programs to try to make school grounds safer for children.

The Discovering IPM curricula grew from a previous project developed for the Teaching Kids About the Environment (KATE) program: a miniature model house furnished and loaded with pest hazards. The house, built by a Clemson University architecture student, originally entertained children in a summer camp program in South Carolina and now has become a frequently visited exhibit at Clemson.



The fully furnished miniature house includes several situations that attract pests, including a leaky outside faucet, food left on the kitchen counter, bushes located too close to the house, and even a puppy who is not housebroken.

The house comes with its own activity guide that includes a game that challenges children to label pest hazards with a red sticker.

Zehnder and his colleagues at Clemson hope that what the children are learning will filter up to their parents. According to a pesticide fact sheet from the California Environmental Services Department, homeowners may use up to 10 times more pesticides per acre than farmers use. They are hoping that the Discovering IPM curricula will help lower that average in the state.

“We know that the children go home and talk to their parents about what they are doing,” Zehnder said. “We didn't track results from that, but we hope that some of it rubbed off.”